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5 APPARATUS AND METHOD FOR PROVIDING PRICING HINTS
DURING AN ON-LINE AUCTION

FIELD OF THE INVENTION

The present invention relates to an apparatus and method for providing pricing hints to a consumer participating in an auction conducted over the Internet.

10 BACKGROUND OF THE INVENTION

E-commerce on the Internet expands along with the number of households that have computers. Many consumers shop from home over the Internet by way of auctions. Some vendors provide a price ceiling which over estimates product value. Pricing search engines exist for retail sites, but not for auction sites. Current auction sites do not provide the consumer with an online capability to evaluate current market value of the items for sale on the auction site. In many cases, items being auctioned have a retail value, or a computable market value that could be made available to the consumer. By identifying the competitive cost of the product, the auction participant will be allowed to make a better decision in making a bid to purchase the product, thereby increasing the chances for winning the bid.

15 20 In addition, the auction web site owner receives a percentage of the final price paid. Therefore, the closer the auction participant bid is to the market value, the higher the profit potential for the auction host.

What is needed beyond the prior art is a way to provide a pricing "hint" based on a

dynamic market value, an historical pricing of the same item, or an established price for which the product is currently selling.

SUMMARY OF THE INVENTION

5 The invention which meets the needs identified above is an apparatus and method for providing assistance to a participant in an on-line auction that allows selection of a bid advisor program. The bid advisor program offers a choice of three different types of pricing data derived from three different data bases--an historical data base, a current price offering data base, a market value data base. Once the participant selects the type of pricing hint
10 desired, an algorithm searches the appropriate data base for the closest match on pricing and displays the suggested price. When the participant selects a price, the bid is placed and the bid assistant program either goes to another bid or is closed.

BRIEF DESCRIPTION OF THE DRAWINGS

15 The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

20 Figure 1 is depiction of a distributed data processing system;

Figure 2 is a depiction of a server computer;

Figure 3 is a depiction of a client computer;

Figure 4 is a depiction of the server memory; and

Figure 5 is a flow chart of the bid assistant program.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 depicts a pictorial representation of a distributed data processing system in which the present invention may be implemented and is intended as an example, and not as an architectural limitation, for the processes of the present invention. Distributed data

10 processing system **100** is a network of computers which contains network **102**, which is the medium used to provide communication links between various devices and computers connected together within distributed data processing system **100**. Network **102** may include permanent connections, such as wire or fiber optic cables, or temporary connections made through telephone connections. In the depicted example, server **104** is connected to
15 network **102** along with storage unit **106**. In addition, clients **108**, **110**, and **112** also are connected to a network **102**. Clients **108**, **110**, and **112** may be, for example, personal computers or network computers.

For purposes of this application, a network computer is any computer, coupled to a network, which receives a program or other application from another computer coupled to
20 the network. In the depicted example, server **104** provides Web based applications to

clients **108, 110** and **112**. Clients **108, 110**, and **112** are clients to server **104**. Distributed data processing system **100** may include additional servers, clients, and other devices not shown. In the depicted example, distributed data processing system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use
5 the TCP/IP suite of protocols to communicate with one another. Distributed data processing system **100** may also be implemented as a number of different types of networks, such as for example, an intranet, a local area network (LAN), or a wide area network (WAN).

Referring to Figure 2, a block diagram depicts a data processing system, which may
10 be implemented as a server, such as server **104** in Figure 1 in accordance with the present invention. Data processing system **200** may be a symmetric multiprocessor (SMP) system including a plurality of processors such as first processor **202** and second processor **204** connected to system bus **206**. Alternatively, a single processor system may be employed. Also connected to system bus **206** is memory controller/cache **208**, which provides an
15 interface to local memory **209**. I/O bus bridge **210** is connected to system bus **206** and provides an interface to I/O bus **212**. Memory controller/cache **208** and I/O bus bridge **210** may be integrated as depicted. Peripheral component interconnect (PCI) bus bridge **214** connected to I/O bus **212** provides an interface to first PCI local bus **216**. Modem **218** may
be connected to first PCI bus local **216**. Typical PCI bus implementations will support
20 four PCI expansion slots or add-in connectors. Communication links to network computers

108, 110, and 112 in Figure 1 may be provided through modem 218 and network adapter 220 connected to first PCI local bus 216 through add-in boards. Additional PCI bus bridges such as second PCI bus bridge 222 and third PCI bus bridge 224 provide interfaces for additional PCI local buses such as second PCI local bus 226 and third PCI local bus 228, 5 from which additional modems or network adapters may be supported. In this manner, server 200 allows connections to multiple network computers. A memory-mapped graphics adapter 230 and hard disk 232 may also be connected to I/O bus 212 as depicted, either directly or indirectly. Those of ordinary skill in the art will appreciate that the hardware depicted in Figure 2 may vary. For example, other peripheral devices, such as an optical 10 disk drive and the like also may be used in addition or in place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention. The data processing system depicted in Figure 2 may be, for example, an IBM RISC/System 6000 system, a product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX) 15 operating system.

With reference now to Figure 3, a block diagram illustrates a data processing system in which the invention may be implemented. Data processing system 300 is an example of either a stand-alone computer, if not connected to distributed data processing system 100, or a client computer, if connected to distributed data processing system 100. Data 20 processing system 300 employs a peripheral component interconnect (PCI) local bus

architecture. Although the depicted example employs a PCI bus, other bus architectures such as Micro Channel and ISA may be used. Processor **302** and main memory **304** are connected to PCI local bus **306** through PCI bridge **303**. PCI bridge **303** also may include an integrated memory controller and cache memory for Processor **302**. Additional

5 connections to PCI local bus **306** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **310**, SCSI host bus adapter **312**, and expansion bus interface **314** are connected to PCI local bus

306 by direct component connection. In contrast, audio adapter **316**, graphics adapter **318**, and audio/video adapter (A/V) **319** are connected to PCI local bus **306** by add-in boards

10 inserted into expansion slots. Expansion bus interface **314** provides a connection for a keyboard and mouse adapter **320**, modem **322**, and additional memory **324**. SCSI host bus adapter **312** provides a connection for hard disk drive **326**, tape drive **328**, and CD-ROM **330** in the depicted example. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors. An operating system runs on processor **302**

15 and is used to coordinate and provide control of various components within data processing system **300** in Figure 3. The operating system may be a commercially available operating system such as OS/2, which is available from International Business Machines Corporation.

"OS/2" is a trademark of International Business Machines Corporation. An object oriented programming system, such as Java, may run in conjunction with the operating system and

20 provides calls to the operating system from Java programs or applications executing on data

processing system **300**. "Java" is a trademark of Sun Microsystems, Incorporated. Instructions for the operating system, the object-oriented operating system, and applications or programs may be located on storage devices, such as hard disk drive **326**, and they may be loaded into main memory **304** for execution by processor **302**. Those of ordinary skill in the art will appreciate that the hardware in Figure 3 may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash ROM (or equivalent nonvolatile memory) or optical disk drives and the like, may be used in addition to or in place of the hardware depicted in Figure 3. Also, the processes of the present invention may be applied to a multiprocessor data processing system. For example, data processing system **300**, if configured as a network computer, may not include SCSI host bus adapter **312**, hard disk drive **326**, tape drive **328**, and CD-ROM **330**, as noted by the box with the dotted line in Figure 3 denoting optional inclusion. In that case, the computer, to be properly called a client computer, must include some type of network communication interface, such as LAN adapter **310**, modem **322**, or the like. As another example, data processing system **300** may be a stand-alone system configured to be bootable without relying on some type of network communication interface, whether or not data processing system **300** comprises some type of network communication interface. As a further example, data processing system **300** may be a Personal Digital Assistant (PDA) device which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data. The depicted example in

Figure 3 and above-described examples are not meant to imply architectural limitations with respect to the present invention. It is important to note that while the present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in a form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media, such as a floppy disc, a hard disk drive, a RAM, and CD-ROMs, and transmission-type media, such as digital and analog communications links.

Figure 4 depicts first memory space **400** containing bid advisor **500** (See Figure 5). Memory **400** contains first auction program **410**, first available memory **420**, search historical data program **430**, search current offerings program **432**, and search market value program **434**. Also contained in memory **400** are historical data base **440**, current offerings data base **442**, and market value data base **444**. Search historical data program **430** accesses historical data base **440**, identifies a product in historical data base **440** that matches an on-line sale offering, and causes the price paid for the product to be displayed. Search current offerings program **432** accesses current offerings data base **442**, identifies a product matching the on-line sale offering that is currently being publicly offered for sale, such as at a retail store, a web site, or catalog, and causes the current offering price to be displayed.

Market value program **434** accesses current market value data base **444**, identifies a given number of products that are similar to the on-line sale offering, calculates a market value for the on-line sale offer from the similar products, and causes the calculated value to be displayed. In the preferred embodiment, memory space **400** is located in a server computer such data processing system **200** in Fig. 2.

Figure 5 depicts second memory space **500** containing second available memory **510**, first web browser program **520**, second auction program **522**, and second bid advisor program **524**. In an alternate embodiment, second auction program **522** may be contained in first web browser program **520**. As used herein, the term web browser shall mean a software program that (1) accesses and displays Hypertext Markup Language (HTML) documents in a computer connected to the Internet and (2) accesses files and software related to the HTML documents. Second auction program **522** is included in first web browser program **520** as original installation, or as an update or plug-in downloaded from a network such as network **102** (see Fig. 1). Second memory **500** may be located in a computer such as data processing system **300** (see Fig. 3).

Figure 6 depicts third memory space **600** containing second web browser program **620**, third available space **610**, third auction program **630**, and third bid advisor program **632**. In an alternate embodiment, third auction program **630** may be installed in third memory space **600** by downloading from a network such as network **102** (see Fig. 1), or loading from a disk or from a compact disc read-only memory (CD-ROM). Third memory

space **600** may be located in a computer such as data processing system **300** (see Fig. 3).

Figure 7 depicts fourth memory space **700**. Fourth memory space has historical data base **440**, current offering data base **442** and market value data base **446**. In an alternate embodiment, where second auction program **522** or third auction program **630** are located
5 in the memory of a computer such as data processing system **300** (see Fig. 3), the data bases to support second bid advisor program **524** and third bid advisor program **632** may be located alone in one or more server computers such as data processing system **200** in
Fig. 2.

Figure 8, depicts a flow chart for bid advisor **800**. In the preferred embodiment,
10 bid advisor **800** is located in the memory of a server computer such as data processing system **200**. (see Fig. 2). Alternatively, bid advisor **800** may be built into a web browser program, incorporated into a web browser program as a plug-in, or placed in the memory of a computer along with a web browser program in a computer such as data processing system **300** (see Fig. 3). Bid advisor **800** begins (802). An item is selected by the user
15 (804). Bid advisor **800** determines whether the user wants assistance with his or her bid (806). If the user does not want assistance, then bid advisor **800** displays a message asking the user to place a bid (808). If the user does want assistance options, then the user invokes bid assistant (810). Bid assistant **810** determines whether the user wants to use historical data (812), current offerings (816), or market value (820) based on the user
20 selection. If the user selects historical data (812), a pricing hint is displayed (814) based on

historical data. The pricing hint based on historical data is identified by accessing a historical data base, identifying a price paid at an earlier date for a product matching the on-line sale offering, and displaying the historical price on the user's computer. The foregoing actions are accomplished by a search historical data program within a bid advisor program in the memory of a server computer, or alternatively in the memory of the auction participant's computer such as search historical data program 430 (see Fig. 4). If the user selects current offerings (816) then a pricing hint is displayed (818) based on current offerings. The pricing hint based on current offerings is identified by accessing a current offerings data base, identifying the price at which the on-line sale offering is currently being publicly offered for sale, and displaying the currently offered price on the user's computer.

The foregoing actions are accomplished by a search current offering program within a bid advisor program in the memory of a server computer, or alternatively in the memory of the auction participant's computer such as search current offerings program 432 of Fig. 4. If the user selects market value, then a hint is displayed (820) based on market value. The pricing hint based on market value is identified by accessing a market value data base, identifying a given number of similar products to the on-line sale offering, calculating a market value based on the similar products, and displaying the market value on the user's computer. The foregoing actions are accomplished by a compute market value program within a bid advisor program in the memory of a server computer, or alternatively in the memory of the auction participant's computer such as compute market value program 434

(see Fig. 4). Next a determination is made as to whether the user is ready to select a price (824). If the user is ready to select a price, the user makes a bid (826) based upon that price. If the user is not ready to select a price, bid advisor 800 determines whether the user wants to make a bid on another item. (828). If the user wants to make a bid on another item, the program returns to step 804. If the user does not want to bid on another item, the program ends (830).

The advantages provided by the present invention should be apparent in light of the detailed description provided above. The description of the present invention has been presented for purposes of illustration and description, but is not limited to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. The embodiment was chosen and described in order to best explain the principles of the invention, the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.